

### **REMARKS**

Claims 1-9, 13-15, and 18-25 are now pending this application, with claims 3-4, 13-15, and 18-21 withdrawn from consideration in light of the Restriction Requirements dated December 12 and March 29, 2001. Claims 10-12, 16-17, 20-21 and 26-66 have been canceled. With this paper Applicants have amended claim 1, canceled claims 20-21, and added new claim 67. Applicants have noted and appreciate the Examiner's withdrawal of the rejection under 35 U.S.C. § 112, first paragraph, as well as the rejoining of claims 5-9 with the claims under consideration.

#### **Restriction Requirement and Claim Amendments**

Applicants have herein amended claim 1 to recite "a plasticizer and/or a tackifier present in an amount sufficient to increase the flexibility and/or the tackiness of the adhesive or coating." This amendment incorporates the subject matter of withdrawn claims 20-21 into independent claim 1. Applicants have, therefore, canceled claims 20-21. Support for this amendment is found in the originally-filed specification in at least page 9, lines 17-20 and page 14, lines 4-14. In addition, Applicants have added new claim 67 directed to particular tackifiers. Support for this amendment is found in the originally-filed specification in at least page 14, lines 11-13. The amendment to claim 1 indicates that the cationic polymer and the plasticizer and/or tackifier are separate components that combine to form the claimed recyclable adhesive or adhesive coating.

In the Restriction Requirement dated December 12, 2001, the Examiner required the Applicants to restrict prosecution of this application to one of six groups of claims. In their response dated January 14, 2002, Applicants provisionally elected, with

traverse, to prosecution the Group I claims directed to an adhesive or coating classified in class 524, subclass 555+. In the Restriction Requirement the Examiner further required the Applicants to elect one of twelve listed patentably distinct species. In the same response and the additional response dated April 29, 2002, Applicants provisionally elected, with traverse, a cationic polymer which is tacky and does not contain a tackifier or a plasticizer. Applicants argued that the Examiner had not shown the presence of a serious burden in examining the entire application since any search of the provisionally elected subject matter would necessarily involve a search of the entire subject matter originally presented (see Response dated January 14, 2002, page 3).

Applicants continue to traverse the necessity of the Examiner's restriction requirement and election of species. Particularly, the species election is at odds with the teachings of the instant specification and the Examiner's own classification of the elected claim group. Original claim 1 recited, in part, a "recyclable adhesive or coating comprising a polymer." The specification states that the claimed adhesive or coating may additionally comprise a plasticizer or tackifier as "other components" (page 14, line 4). Applicants, therefore, could not have properly chosen a plasticizer or tackifier as a specie of the claimed adhesive since the independent claim specifically recites those compounds as "other components" may be added along with the cationic polymer. As such, the claims reciting the further presence of a plasticizer or tackifier in the claimed adhesive or coating were not properly restricted out of the invention.

In fact, Applicants' election of a "tacky polymer" should necessarily include a search of references involving tackifiers. The specification reveals that certain polymers may be suitable as tackifiers for use with the claimed cationic polymer, such as

poly(ethylene glycol) compounds (page 14, line 13). Any proper search of an elected tacky polymer would certainly have included such compounds. Further, the Examiner's own classification of the elected group as class 524, subclass 555+ includes plasticizers. The U.S. Manual of Classification lists "plasticizer additives" in group 524, subclass 567 as "any chemical agent which is added to a synthetic resin in order to impart flexibility, workability, stretchability or a related property to the synthetic resin." Such a definition is entirely within the disclosed use in the specification (see page 14, line 5). As a result, any search for the elected group would properly include a search or reference to the plasticizers listed in the nearby subclass. The Examiner also noted an intent to look in these additional areas by noting the subclass as 555"+".

For all of these reasons, Applicants traverse the restriction and election requirements and now present amended claim 1 reciting the presence of a plasticizer and/or a tackifier. Even if the Examiner believes the above comments not to be persuasive in overcoming the restriction requirement, Applicants submit that the Examiner should permit a shift in elected subject matter. See MPEP § 819.01. As will be discussed below, the incorporation of the plasticizer and/or tackifier greatly reduces the work necessary in prosecuting this application by simplifying or eliminating issues. Further, the shift would not result in any additional work or expense. Applicants, therefore, respectfully request that the Examiner allow and enter the amendment to claim 1 presented herein in furtherance of the prosecution of this application.

Applicants have also amended withdrawn claim 14 to change its dependency from claim 5 to claim 13. Applicants submit that this amended adds no new matter to the application and respectfully request that it be entered by the Examiner.

### **Rejections over Mandeville et al.**

The Examiner rejects claims 1-2, 5-9, and 22-25 under 35 U.S.C. § 102(e) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over, U.S. Patent No. 6,007,803 to Mandeville et al. The Examiner asserts that this reference teaches a co-polymer of MAPTAC and butyl acrylate, thus anticipating or rendering obvious the recyclable adhesive recited in the pending claims. Applicants respectfully traverse these rejections.

In order for a claim to be anticipated, a reference must disclose each and every element of the claim either expressly or inherently. See MPEP § 2131. Mandeville et al. teaches a cationic polymer used as a toxin binding agent to treat pathogenic toxins in mammals. See abstract. Amended independent claim 1 of this application specifies that the claimed adhesive or coating comprises “a plasticizer and/or a tackifier present in an amount sufficient to increase the flexibility and/or the tackiness of the adhesive or coating.” Mandeville et al. does not disclose the presence of a plasticizer or a tackifier in its treatment of cationic compounds directed toward the medical arts and the treatment of toxins. As a result, Applicants submit that Mandeville et al. does not anticipate claims 1-2, 5-9, and 22-25 and, therefore, respectfully request that this rejection be withdrawn.

In order to prove a *prima facie* case of obviousness, the Examiner must provide a reference or references that satisfy three basic criteria: (1) there must be some motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art

reference or references must teach or suggest all the claim limitations. See MPEP § 2143. Applicants submit that Mandeville et al. cannot meet at least the first and third requirements for a *prima facie* case of obviousness. As discussed above in regards to the 35 U.S.C. § 102(e) rejection, Mandeville et al. does not disclose a plasticizer or tackifier as recited in claim 1. Thus, the reference neither teaches nor suggests this claim limitation.

In addition, Applicants have previously argued and continue to assert that Mandeville et al. is not analogous art to claimed recyclable adhesive or adhesive coating (see Preliminary Amendment dated November 26, 2003, at pages 11-13). That reference is directed to the medical arts and toxin binding in a blood stream, not to paper-making as the present invention. The Declaration of Dr. Yulin Deng dated July 28, 2003, highlights the different purposes of the teachings of the cited reference and the present application, revealing that one of ordinary skill would not look to such art in creating a recyclable adhesive, regardless of any supposed equivalence in the structure of the cationic polymer. Therefore, one of ordinary skill would not be motivated to modify the teachings of Mandeville et al. with a plasticizer or a tackifier in an effort to achieve the claimed invention. For at least these reasons and those already of record, Applicants submit that the Examiner has not proven a *prima facie* case of obviousness over Mandeville et al. and respectfully request the withdrawal of this rejection.

#### **Rejections over Bister et al.**

The Examiner has rejected claims 1-2, 5-9, and 22-25 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over, U.S.

Patent No. 4,871,594 to Bister et al. The Examiner asserts that this reference teaches a co-polymer of MAPTAC and n-butyl acrylate, thus anticipating or rendering obvious the claimed recyclable adhesive. Applicants respectfully traverse these rejections.

As stated above, a reference must disclose each and every element of the claim either expressly or inherently to anticipate a claim. See MPEP § 2131. Bister et al. teaches aqueous cationic dispersions used for impregnating and priming porous absorbent substrates. See abstract. Independent claim 1 of this application specifies that “the adhesive or coating is attracted to fibers during paper recycling” and the presence of a plasticizer and/or a tackifier. Nowhere in its specification does Bister et al. either expressly or inherently disclose that its aqueous dispersions would be attracted to fibers during recycling or disclose that its dispersions would contain a plasticizer or tackifier as a separate component. As a result, Applicants submit that Bister et al. does not anticipate claims 1-2, 5-9, and 22-25 and, therefore, respectfully request that this rejection be withdrawn.

Applicants have stated above the requirements of a *prima facie* case of obviousness, one of which is that the cited reference must teach or suggest all the claim limitations. See MPEP § 2143. Independent claim 1 of the pending application recites that the “adhesive or coating is attracted to fibers during paper recycling.” This limitation is neither taught nor suggested by the teachings of Bister et al. that are primarily directed toward the “impregnating, priming and consolidating [of] absorbent substrates.” Col. 1, ln. 10-11.

In addition, Bister et al. may state that “external plasticizers can be employed in order to achieve the required MFT” (col. 5, lines 33-34), but these plasticizers are co-

polymerized with the other monomeric species to create the desired aqueous dispersion. See col. 5, lines 37-43 (stating that “comonomer combinations” of an alleged plasticizer “in combination with cationic monomers are very particularly suitable for the preparation of aqueous cationic dispersions according to the invention”); Examples 1-3, cols. 9-10 (stating that the MMA plasticizer, along with the other components of the composition, are contained in the cationic dispersion copolymer as monomeric units). Quite differently, the plasticizers of the present invention are not co-polymerized with the cationic monomer and backbone compound; instead, the claimed recyclable adhesive or adhesive composition may comprise a plasticizer has an additional component. The instant specification distinguishes components like internal cross-linkers and water soluble uncharged monomers or macromers, which can be “added to the reaction mixture” and co-polymerized with the cationic monomer and backbone compound, from plasticizers and tackifiers, which the adhesive may comprise “in addition to the polymer” (page 9, lines 10-20). Because Bister et al. does not teach or suggest a plasticizer as a separate component from its cationic dispersion, that reference cannot serve as the basis for a *prima facie* case of obviousness.

Furthermore, Applicants submit that the Examiner has not made a showing that one of ordinary skill would be motivated to modify the primers taught by Bister et al. for use as recyclable adhesives. The divergent purpose of the cited reference and the pending claims highlights why a skilled artisan would not attempt to use a substrate primer as a fiber-attractive recyclable adhesive, regardless of any asserted similarity between the polymers used for these purposes.

As such, Applicants submit that the disclosure of Bister et al. is insufficient to cause one of ordinary skill to make the leap from a substrate primer to a recyclable adhesive. See *In re Linter*, 458 F.2d 1013 (C.C.P.A. 1973); MPEP § 2143.01. In sum, the Examiner has not proven a *prima facie* case of obviousness over Bister et al. because the reference does not teach or suggest all the limitations of the pending claims and one of ordinary skill would not be motivated to modify its teachings to achieve the claimed recyclable adhesive. Applicants respectfully request that the Examiner's rejections over Bister et al. be withdrawn.

#### **Rejections over Huth et al.**

The Examiner rejects claims 1-2, 5-9, and 22-25 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over, U.S. Patent No. 5,518,585 to Huth et al. The Examiner asserts that the disclosed compositions for sizing paper pulp, made from butyl acrylate and MAPTAC, either anticipate or render obvious the pending claims. Applicants respectfully traverse these rejections.

Huth et al. states that its cationic dispersions are plastics. See col. 2, ln. 61-65. Applicants submit that a plastic cannot be used as a recyclable adhesive, and certainly that a plastic is not suggested by the reference to be attracted to fibers during recycling. Dr. Yulin Deng, in his Declaration of July 28, 2003, makes the same assertion. Therefore, despite the Examiner's statements otherwise, the plastic compositions of Huth et al. would not be capable of performing the same intended use as the recyclable adhesives of the pending claims.



The aqueous cationic copolymer dispersion of Huth et al. is used as an internal paper sizing agent by adding it to a pulp slurry before the paper is made. Sizing agents provide water resistance to paper and as such are hydrophobic, leading to the need for the disclosed and required retention aid (see col. 4, line 41 - col. 5 line 12). The claimed recyclable adhesive or adhesive coating, however, is not hydrophobic and instead is "soluble or dispersible in water." Furthermore, the claimed adhesive is tacky; if the dispersion of Huth et al. was tacky and used in the wet end of a paper making machine, then the produced paper would be tacky as well. Each of these characteristics would lead one skilled in the art away from the teachings of Huth et al. in attempting to create the claimed recyclable adhesive or adhesive coating, leading to a lack of motivation to modify its teachings. For all the reasons given above, Applicants submit that Huth et al. cannot be relied upon to make a *prima facie* case of obviousness as it does not teach or suggest all the limitations of the pending claims and as one of ordinary skill would not be motivated to modify its teachings in an effort to achieve the subject matter of the pending claims. Applicants therefore respectfully request the withdrawal of the obviousness rejection based on this reference.

As to anticipation, Huth et al. does not disclose that its plastic sizing agents would be attracted to fibers during paper recycling, as recited in the pending claims. Furthermore, Huth et al. does not teach the addition of a plasticizer or tackifier to its aqueous cationic copolymer dispersions. As discussed above, if the disclosed compositions were tacky then the produced paper would be tacky. In addition, the addition of a tackifier to the wet end of a paper-making machine would cause paper fibers to stick to the machine, clogging it up and preventing its proper operation.

Therefore, Huth et al. should not anticipate the pending claims as it does not disclose these claim limitations. Applicants respectfully request the withdrawal of this rejection.

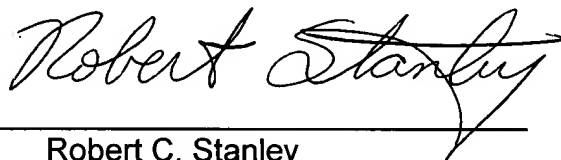
### Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request the reconsideration and the continued examination of this application and the timely allowance of the pending claims. In the event the Examiner does not believe that this submission places the application in condition for allowance, Applicants respectfully request that the Examiner contact the undersigned by telephone at 404-653-6441 in order to expedite the prosecution of this application.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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By: \_\_\_\_\_

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